

Appendix B: Comparison Between NEMA Enclosure Type Numbers and IEC Enclosure Classification Designations

IEC Publication 529 "Classification of Degrees of Protection Provided by Enclosures" provides a system for specifying the enclosures of electrical equipment on the basis of the degree of protection provided by the enclosure. IEC 529 does not specify degrees of protection against mechanical damage of equipment, risk of explosions, or conditions such as moisture (produced for example by condensation), corrosive vapors, fungus, or vermin. The NEMA Standard for Enclosures for Electrical Equipment **does** test for environmental conditions such as corrosion, rust, icing, oil, and coolants. For this reason, and because the test and evaluations for other characteristics are not identical, the IEC Enclosure Classification Designations cannot be exactly equated with NEMA Enclosure Type numbers.

The IEC designation consists of the letters IP followed by two numerals. The first characteristic numeral indicates the degree of protection provided by the enclosure with respect to persons and solid foreign objects entering the enclosure. The second characteristic numeral indicates the degree of protection provided by the enclosure with respect to the harmful ingress of water.

The following table provides an equivalent conversion from NEMA enclosure Type numbers to IEC Enclosure Classification Designations. The NEMA type numbers meet or exceed the test requirements for the associated IEC Classification. This table cannot be used to convert from IEC Classifications to NEMA Enclosure Type numbers.

Conversion of NEMA Enclosure Type numbers to IEC Classification Designations (Cannot be used to convert IEC Classification Designations to NEMA Type numbers)	
NEMA Enclosure Type Number	IEC Enclosure Classification Designation
1	IP10
2	IP11
3	IP54
3R	IP14
3S	IP54
4 and 4X	IP56
5	IP52
6 and 6P	IP67
12 and 12K	IP52
13	IP54

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